

Listing of Claims:

1. (Original) A video display apparatus with an on-screen display pivoting function, comprising:

an on-screen display (OSD) generating section for receiving horizontal/vertical synchronizing signals and clock signals, and for outputting first video signals in response to OSD control signals;

a pivot circuit section for receiving the first video signals, for storing in a position-converting manner a write address of the first video signals in correspondence with a pre-set pivot write address, and for converting the write address in response to the horizontal/vertical synchronizing signals and the clock signals so as to output the first video signals in the form of second video signals;

a scale converting section for furnishing the horizontal/vertical synchronizing signals and the clock signals to said OSD generating section and said pivot circuit section, respectively, and for receiving the second video signals so as to convert scales of the second video signals in response to scale control signals; and

a control section for furnishing the OSD control signals and the scale control signals to said OSD generating section and said scale converting section, respectively, in response to OSD driving signals, and for furnishing pivot control signals to said pivot control section in response to mode control signals generated by a user.

2. (Original) The video display apparatus as claimed in claim 1, wherein said pivot circuit section comprises:

an R-pivot circuit for receiving R-data signals of the first video signals from said OSD generating section, for storing in a position-converting manner a write address of the R-data signals in correspondence with a pre-set pivot write address in response to the pivot control signals, and for converting the write address in response to the horizontal/vertical synchronizing signals and the clock signals so as to output the stored R-data signals in a form of R-data signals of the second video signals;

a G-pivot circuit for receiving G-data signals of the first video signals from said OSD generating section, for storing in a position-converting manner a write address of the G-data

signals in correspondence with the pre-set pivot write address in response to the pivot control signals, and for converting the write address in response to the horizontal/vertical synchronizing signals and the clock signals so as to output the stored G-data signals in a form of G-data signals of the second video signals; and

a B-pivot circuit for receiving B-data signals of the first video signals from said OSD generating section, for storing in a position-converting manner a write address of the B-data signals in correspondence with the pre-set pivot write address in response to the pivot control signals, and for converting the write address in response to the horizontal/vertical synchronizing signals and the clock signals so as to output the stored B-data signals in a form of B-data signals of the second video signals.

3. (Original) The video display apparatus as claimed in claim 2, wherein each of said R, G, and B pivot circuits comprises:

an analog/digital converting section for receiving relevant picture data signals of R, G and B data signals, respectively, of the first video signals from said OSD generating section so as to convert them to digital signals;

a buffering section for receiving and storing the picture data signals from said analog/digital converting section, and for outputting previous picture data signals upon receiving next picture data signals from said analog/digital converting section;

a pivot controller for outputting storing position control signals and data selection control signals in response to the pivot control signals of said control section;

a data storing section for receiving and storing the picture data signals of said buffering section, and for storing in a position-converting manner a write address of the picture data signals of said buffering section in correspondence with the pre-set pivot write address in response to the storing position control signals; and

a data selector for receiving one of the picture data signals of the first video signals and the picture data signals of said data storing section, and for outputting said one of the picture data signals of the first video signals and the picture data signals of said data storing section in a form of second video signals.

4. (Original) The video display apparatus as claimed in claim 3, wherein said

buffering section comprises eight buffers for storing 8-bit picture data signals from said analog/digital converting section.

5. (Original) A video display apparatus with an on-screen display pivoting function, comprising:

- a power supply section for supplying power;
- a display section for receiving the power from said power supply section, and for displaying a picture of externally inputted video signals to a user;
- a signal converter/clock generator section for receiving horizontal/vertical synchronizing signals and video signals, for converting the video signals to first digital signals in response to first control signals, and for generating clock signals;
- a decoder for receiving brightness/chromatic signals, and for converting the brightness/chromatic signals to second digital signals in response to second control signals;
- a frame rate converter section for receiving the horizontal/vertical synchronizing signals and the video signals from said signal converting/clock generator section, for receiving the brightness/chromatic signals from said decoder, for storing the video signals in response to third control signals, and for converting the stored video signals so as to have a certain frequency ratio in correspondence with display characteristics of the display section;
- an on-screen display (OSD) generating section for receiving the horizontal/vertical synchronizing signals and the clock signals, and for outputting first video signals in response to OSD control signals;
- a pivot circuit section for receiving the first video signals, for storing in a position-converting manner a write address of the first video signals in correspondence with a pre-set pivot write address, and for converting the write address in response to the horizontal/vertical synchronizing signals and the clock signals so as to output the first video signals in the form of second video signals;
- a scale converting section for furnishing the horizontal/vertical synchronizing signals and the clock signals to said OSD generating section and said pivot circuit section, respectively, for converting scales of video signals of said frame rate converting section, and for receiving the second video signals so as to convert scales of the second video signals of said pivot circuit section in response to scale control signals;

a control section for furnishing the first, second and third control signals to said signal converting/clock generating section, said decoder and said frame rate converting section, respectively, for furnishing the OSD control signals and the scale control signals to said OSD generating section and said scale converting section, respectively, in response to OSD driving signals, and for furnishing pivot control signals to said pivot circuit section in response to mode control signals; and

a driving section for furnishing video signals and driving signals from said scale converting section to said display section.

6. (Original) The video display apparatus as claimed in claim 5, wherein said pivot circuit section comprises:

an R-pivot circuit for receiving R-data signals of the first video signals from said OSD generating section, for storing in a position-converting manner a write address of the R-data signals in correspondence with a pre-set pivot write address in response to the pivot control signals, and for converting the write address in response to the horizontal/vertical synchronizing signals and the clock signals so as to output the stored R-data signals in a form of R-data signals of the second video signals;

a G-pivot circuit for receiving G-data signals of the first video signals from said OSD generating section, for storing in a position-converting manner a write address of the G-data signals in correspondence with the pre-set pivot write address in response to the pivot control signals, and for converting the write address in response to the horizontal/vertical synchronizing signals and the clock signals so as to output the stored G-data signals in a form of G-data signals of the second video signals; and

a B-pivot circuit for receiving B-data signals of the first video signals from said OSD generating section, for storing in a position-converting manner a write address of the B-data signals in correspondence with the pre-set pivot write address in response to the pivot control signals, and for converting the write address in response to the horizontal/vertical synchronizing signals and the clock signals so as to output the stored B-data signals in a form of B-data signals of the second video signals.

7. (Original) The video display apparatus as claimed in claim 6, wherein each

of said R, G and B pivot circuits comprises:

an analog/digital converting section for receiving relevant picture data signals of the R, G and B data signals, respectively, of the first video signals from said OSD generating section so as to convert them to digital signals;

a buffering section for receiving and storing the picture data signals from said analog/digital converting section, and for outputting previous picture data signals upon receiving next picture data signals from said analog/digital converting section;

a pivot controller for outputting storing position control signals and data selection control signals in response to the pivot control signals of said control section;

a data storing section for receiving and storing the picture data signals of said buffering section, and for storing in a position-converting manner a write address of the picture data signals of said buffering section in correspondence with a pre-set pivot write address in response to store position control signals; and

a data selector for receiving one of the picture data signals of the first video signals and the picture data signals of said data storing section, and for outputting said one of the picture data signals of the first video signals and the picture data signals of said data storing section in a form of second video signals.

8. (Original) The video display apparatus as claimed in claim 7, wherein said buffering section comprises eight buffers for storing 8-bit picture data signals from said analog/digital converting section.

9. (Original) The video display apparatus as claimed in claim 5, wherein said frame rate converter section comprises:

a frame memory for storing the digital video signals from said signal converter/clock generator section in response to control inputs; and

a frame rate converter for writing the output video signals of said signal converter/clock generator section into said frame memory, and for reading out the video signals written into said frame memory so as to convert the video signals to have a certain frequency ratio in correspondence with display characteristics of said display section.

10. (Original) The video display apparatus as claimed in claim 9, wherein said frame rate converter generates said control inputs and provides said control input to said frame memory.

11. (Original) The video display apparatus as claimed in claim 5, wherein said OSD driving signals are generated by the user.

12. (Original) The video display apparatus as claimed in claim 5, wherein said mode control signals are generated by the user.

13. (Original) A video display apparatus having an on-screen display pivoting function, comprising:

on-screen display (OSD) generating means for outputting first video signals having a write address in response to OSD signals;

pivot circuit means for receiving the first video signals, for converting the write address of the first video signals, and for outputting the first video signal in the form of second video signals having scales;

scale converting means for receiving the second video signals, and for converting the scales of the second video signals in response to scale control signals; and

control means for furnishing the OSD control signals and the scale control signals to said OSD generating means and said scale converting means, respectively, in response to OSD driving signals generated by a user input.

14. (Original) The video display apparatus as claimed in claim 13, wherein said pivot circuit means comprises:

an R-pivot circuit for receiving R-data signals of the first video signals from said OSD generating means, for storing a write address of the R-data signals in response to pivot control signals generated by said control means, and for converting the write address so as to output the R-data signals in a form of R-data signals of the second video signals;

a G-pivot circuit for receiving G-data signals of the first video signals from said OSD generating means and for converting the write address so as to output the stored G-data signals

in a form of G-data signals of the second video signals; and

a B-pivot circuit for receiving B-data signals of the first video signals from said OSD generating means and for converting the write address so as to output the stored B-data signals in a form of B-data signals of the second video signals.

15. (Original) The video display apparatus as claimed in claim 14, wherein each of said R, G and B pivot circuits comprises:

an analog/digital converting section for receiving relevant picture data signals of R, G and B data signals, respectively, of the first video signals from said OSD generating means so as to convert them to digital signals;

a buffering section for receiving and storing the picture data signals from said analog/digital converting section, and for outputting previous picture data signals upon receiving next picture data signals from said analog/digital converting section;

a pivot controller for outputting storing position control signals and data selection control signals in response to pivot control signals from said control means;

a data storing section for receiving and storing the picture data signals of said buffering section, and for storing a write address of the picture data signals of said buffering section in response to the storing position control signals; and

a data selector for receiving one of the picture data signals of the first video signals and the picture data signals of said data storing section, and for outputting said one of the picture data signals of the first video signals and the picture data signals of said data storing section in a form of second video signals.

16. (Original) The video display apparatus as claimed in claim 15, wherein said buffering section comprises eight buffers for storing 8-bit picture data signals from said analog/digital converting section.

17. (Original) The video display apparatus as claimed in claim 13, further comprising:

signal converting/clock generating means for receiving horizontal/vertical synchronizing signals and video signals, for converting the video signals to first digital signals in response to

first control signals from said control means, and for generating clock signals.

18. (Original) The video display apparatus as claimed in claim 17, further comprising:

decoder means for receiving brightness/chromatic signals, and for converting the brightness/chromatic signal to second digital signals in response to second control signals from said control means.

19. (Original) The video display apparatus as claimed in claim 18, further comprising:

frame rate converting means for receiving the horizontal/vertical synchronizing signals and the first video signals from said signal converting/clock generating means, for receiving the brightness/chromatic signals from said decoder means, for storing the first video signals in response to third control signals from said control means, and for converting the stored first video signals so as to have a certain frequency ratio in correspondence with display characteristics of a display section.

20. (Currently Amended) A method of displaying an on-screen display (OSD) image in a video display apparatus having a screen panel and a rotatable screen body supporting the screen, the method comprising:

generating a pivot control signal to be supplied to a pivot circuit so as to display the OSD image suitable to a rotated state of the rotatable screen body [a mode signal indicating a rotated state of the screen body according to manipulation of a key to indicate the rotated state of the screen body; and]

converting scales of externally input color component video signals to have a certain frequency ratio in correspondence with display characteristics of the screen panel;

manipulating a key located on the rotatable screen body; and

displaying a picture of [externally inputted] the converted color component video signals on the screen body, and displaying the OSD image on the displayed picture [at a rotated position] in accordance with the pivot control signal and the key manipulation [mode signal; and

activating a key located on the rotatable body].

21. (Cancelled)

22. (Previously Presented) The method as claimed in claim 20, further comprising: generating an OSD control signal to request generation of the OSD image according to the key manipulation by the user [wherein the user input is made by a direct key selection].

23. (Previously Presented) The method as claimed in claim 20, further comprising:
generating a mode control signal indicating a rotated state of the screen body according to the key manipulation by the user,
wherein the pivot control signal is generated to control the pivot circuit to generate a pivoted OSD image signal in response to the mode control signal generated by the user [rotating the OSD image in accordance with the mode signal].

24-25 (Cancelled)

26. (Previously Presented) The method as claimed in claim 23, further comprising:
rotating the OSD image in accordance with the mode control signal,
wherein the OSD image rotating operation comprises reordering read sequence of the OSD data which is stored in a data memory.

27. (Previously Presented) The method as claimed in claim 26, wherein the reordering operation is made to form characters and/or symbols represented by the OSD data in a perpendicularly rotated manner.

28. (Previously Presented) The method as claimed in claim 23, further comprising:
rotating the OSD image in accordance with the mode control signal,
wherein the OSD image rotating operation comprises reordering read addresses of the

OSD data which is stored in a data memory.

29. (Previously Presented) The method as claimed in claim 28, wherein the reordering operation is made to form characters and/or symbols represented by the OSD data in a perpendicularly rotated manner.

30. (Previously Presented) The method as claimed in claim 20, wherein the displaying operation comprises:

reading OSD data contained in the OSD image as first OSD data; and
modifying the first OSD data as second OSD data according to the generated mode signal.

31. (Previously Presented) The method as claimed in claim 30, wherein the modifying operation comprises:

storing a write address of the first OSD data in a predetermined format that corresponds to the rotated position of the screen body.

32-33 (Canceled)

34. (Currently Amended) A method of displaying an OSD [a first] image including an on-screen display (OSD) in a video display apparatus having a screen panel and a rotatable screen body, the method comprising:

receiving [an] externally input video signals [signal] having a picture [second image];
generating a pivot control signal to display the OSD image suitable to a rotated state of the rotatable screen body;

converting scales of the input video signals to have a certain frequency ratio in correspondence with display characteristics of the screen panel;

displaying the converted picture [second image];

modifying OSD data corresponding to the OSD [first] image including the OSD with respect to the pivot control signal [a position of the rotatable screen when the screen is rotated, according to a key manipulation to indicate the position of the rotatable screen]; and

displaying the OSD [first] image that corresponds to the modified OSD data on the [second image] converted picture displayed on the rotatable screen panel], wherein the key is located on the screen body].

35. (Previously Presented) A video display apparatus having a screen body and a screen panel to display an on- screen display (OSD) image, the video display apparatus comprising:

a converter to receive externally input [inputted] video signals having a picture and to convert scales of the input video signals to have a certain frequency ratio in correspondence with display characteristics of the screen panel;

a controller to generate a pivot control signal to display the OSD image suitable to a rotated state of the screen body [mode signal indicating a rotated state of the screen body according to a key manipulation by a user to indicate a rotated position of the screen body]; and

a circuit unit to display the picture of the externally inputted video signals on the screen panel body and to display the OSD image at a rotated position in accordance with the pivot control [mode] signal on the displayed picture[, wherein the key is located on the screen body].

36-51 (Canceled)

52. (Previously Presented) A video display apparatus having a rotatable display unit, the video display apparatus comprising:

an external signal unit to receive an external image signal;

an OSD generator to generate an internal OSD image signal in response to an OSD driving signal;

a control unit to generate [at least one of a mode signal indicating a rotated state of the display unit] a pivot control signal to display the OSD image suitable to a rotated state of the rotatable display unit and a OSD driving signal according to a key manipulation by a user to indicate the rotated state of the display unit and request an OSD, respectively; and

a circuit unit to drive the display unit to display the external image signal and to drive the display unit to display the internal OSD image signal at a rotated position in accordance with the

pivot control [mode] signal generated by the control unit,

wherein the display unit comprises one or more function keys to change the operation settings thereof by indicating the rotated state of the display unit such that the circuit unit drives the display unit to display the internal OSD image signal in response to a selection of the one or more function keys.

53. (Canceled)

54. (Previously Presented) The video apparatus as claimed in claim 52,

wherein the display unit comprises:

a screen; and

a rotatable screen body surrounding the screen having the one or more function keys installed thereon.

55-75 (Canceled)

76. (Currently Amended) A video display apparatus having an on-screen display pivoting function, comprising:

a rotatable display;

a controller to receive at least one of a mode control signal and an on-screen display (OSD) control signal, and to generate at least one of a pivot control signal and a OSD driving signal, respectively;

a frame converter to receive video signals and to convert the video signals so as to have a certain frequency ratio in correspondence with display characteristics of the display;

an on-screen display (OSD) generator to receive the converted video signals and to output first video signals in response to the OSD control signal;

a pivot circuit section to receive the first video signals, to store in a position-converting manner a write address of the first video signals in correspondence with a pre-set pivot write address, and to convert the write address so as to output the first video signals in the form of pivoted second video signals in response to the pivot control signal; and

a scale converting section to convert scales of video signals of the frame rate converter,

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and to receive the pivoted second video signals to convert scales of the second video signals of the pivot circuit in response to scale control signals;

77-80 (Canceled)